

WE CLAIM:
Patent claims,

1. Method for manufacturing metallic fine structures (5) on a thin base layer (3) made of a flexible organic material, having the following steps:

- application of the base layer onto a rigid auxiliary bearer (1);
- production of the metallic fine structures (5) on the base layer (3);
- detaching of the base layer (3) from the auxiliary bearer (1) through the action of laser radiation (LS) directed through the auxiliary bearer (1) onto the base layer (3), whereby
- the auxiliary bearer (1) is made of a material that is at least largely transparent to the laser radiation (LS) used for the detaching of the base layer (3).

2. Method according to claim 1, characterized in that

an auxiliary bearer (1) made of quartz glass is used, and in that an excimer laser having a wavelength of the laser radiation (LS) of 248 nm is used for the detaching of the base layer (3).

3. Method according to claim 1, characterized in that

an auxiliary bearer (1) made of borosilicate glass is used, and in that an excimer laser having a wavelength of the laser radiation (LS) of 350 nm is used for the detaching of the base layer (3).

4. Method according to one of claims 1 to 3, characterized in that

before the application of the base layer (3), an adhesive layer (2) is applied onto the auxiliary bearer (1).

5. Method according to claim 4, characterized in that

an adhesive layer (2) made of titanium is applied onto the auxiliary bearer (1).

6. Method according to claim 4 or 5,
characterized in that
the adhesive layer (2) is applied onto the auxiliary bearer (1) by sputtering.

7. Method according to one of the preceding claims,
characterized in that
the base layer (3) is applied in the form of a film.

8. Method according to claim 7,
characterized by the use of a film made of a thermostable polyimide.

9. Method according to claim 7 or 8,
characterized in that
a planarization (4) made of an electrically insulating material is applied onto the base layer
(3).

10. Method according to one of the preceding claims,
characterized in that
an insulating layer (6) is applied onto the metallic fine structures (5), and in that a second
layer of metallic fine structures (7) is produced on the insulating layer (6), and in that the base
layer (3) is then detached from the auxiliary bearer (19).

11. Method according to claim 10,
characterized in that
holes (61) are made in the insulating layer (6) that, during the production of the second layer
of metallic fine structures (7), form through-contactings to the first layer of metallic fine
structures (5).

12. Method according to claim 10 or 11,
characterized in that

before the detaching of the base layer (3), a passivation layer (8) is applied onto the second layer of metallic fine structures (7).

13. Application of the method according to one of claims 10 to 12 for the manufacture of sensor arrangements for the acquisition of fingerprints.

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